Section 28 further downriver is also entirely subdivided, with 10 lots in Fleming East Subdivision on the northeast side of the river, and 10 lots in Lott Ranch Subdivision on the southwest side of the river. Human use of the nest area increased dramatically in late 1995 and early 1996 as surveyors and planners prepared subdivision plots. Future construction within these subdivisions will at best force the pair to nest away from the activity, and may eliminate this productive nesting area entirely.

A new subdivision was recently approved for most of the west side of the river in the immediate vicinity of the **Conant Valley** nest used in most years since the late 1970s (29 young produced since 1982). This Conant Valley subdivision allows 103 lots on 350 acres. As at the Palisades Creek breeding area, the vicinity of the nest used since 1988 was frequently visited by surveyors and others during the fall and winter of 1995. This pair has occasionally nested on the large island on the opposite side of the main channel, but most of the favored foraging area is within the area proposed for development.

Bald Eagle Breeding Areas, Preliminary Key Use Identification

We provide baseline information on three bald eagle breeding areas for use in development of breeding area management planning. We have not completed intensive observations within these breeding areas, and do not know the complete extent of foraging area and home range use. We do provide a summary of breeding area history and productivity, nesting chronology, occupied nest zones, and comments on known foraging and perching areas and breeding area habitat quality. Our maps provide a preliminary view of the key use area for each breeding area discussed.

Swan Valley 18-IS-05

Breeding Area History. A bald eagle pair built a nest in the Swan Valley breeding area in 1967, the first breeding area to be re-established on the South Fork Snake River. From 1968 to 1975, this breeding area produced an impressive average of 2.1 advanced young/year (Table 5). In more recent years, productivity in this breeding area has been inconsistent, with many nesting failures (e.g. no young produced 1991-1993).

There have been several adult mortalities in this area over the years. Remains of an adult bald eagle were found downstream of the nest during the nesting season in 1980. The cause of mortality was not determined. On 6/3/93, an adult bald eagle from the Swan Valley territory that had been grounded by an apparent collision injury to a wing was turned in to the Idaho Department of Fish and Game. This bird's wings were so severely damaged by a suspected long period on the ground that it was not possible to rehabilitate it for life in the wild. Reportedly, the second adult had been feeding the injured adult on the ground.

As of 1995, 5 of 6 different nests used within the Swan Valley breeding area were in cottonwoods on the northeast side of the river. Information on actual nest locations is somewhat confusing, but the following is our interpretation of Swan Valley nesting records. Nest #1, built in 1967 and used for 8 of the next 9 years, was located in the NW 1/4 Sec 18, R44E, T1N. This nest apparently blew down after the 1975 nesting season. Nests #2 (in NW 1/4 of Sec. 12, R43E, T1N) and #3 (SW 1/4 Sec. 2, R43E, T1N) were used only 1 and 2 years respectively. Nest #4 was occupied in 15 years from 1978-1993 in a prominent cottonwood in

the NW 1/4 of Sec 12, R43E, T1N. Although currently intact and in apparently good condition, this nest sometimes became unstable during the nesting season. For example, the bottom fell out in 1979, with resultant mortality of one nestling. Banders noted this nest's instability during banding entry several times in the 1980s. Nest #4 has been used by Canada geese in several recent years after bald eagle nesting failures or when the eagles were active at another site. Nest #5, an old great blue heron nest in a Douglas fir on the west side of the river in the SE 1/4 Sec.12, R43E, T1N, was used successfully by bald eagles in 1984. Bald eagle use of nest #6, in an old-growth cottonwood in the NE 1/4 Sec.11, R43E, T1N, was first noted in 1994. Nest debris found at the base of the nest tree suggested that this nest was built earlier. The nesting pair successfully fledged young from nest #6 in 1994 and 1995, but the nest tree is likely to fall apart in the next few years due to rot in the trunk and primary limbs.

Table 5. Known productivity at the Swan Valley bald eagle breeding area since re-establishment of nesting pairs on the South Fork Snake River.[1]

YEAR	NESTING STATUS	NUMBER YOUNG FLEDGED	NEST NUMBER	COMMENT
1967	Active, unknown	?	Nest #1	Nest built.
1968	Active, Successful	2	Nest #1	
1969	Active, Successful	2	Nest #1	
1970	Active, Successful	2	Nest #1	
1971	Active, Successful	2	Nest #1	
1972	Active, Successful	2	Nest #2	
1973	Active, Successful	2	Nest #1	
1974	Active, Successful	2	Nest #1	
1975	Active, Successful	3	Nest #1	
1976	Active, unknown	?	Nest #3	
1977	Active, unknown	?	Nest #3	
1978	Active, unknown	?	Nest #4	
1979	Active, Unsuccessful	0	Nest #4	Bottom of nest fell out.
1980	Active, Unsuccessful	0	Nest #4	
1981	Active, Successful		Nest #4	
1982	Active, Successful	2	Nest #4	Banded
1983	Active, Successful	2	Nest #4	Banded
1984	Active, Successful	1	Nest #5	
1985	Unoccupied	0	Nest #4	
1986	Active, Successful	1	Nest #4	
1987	Active, Successful	2	Nest #4	Banded
1988	Active, Successful	1	Nest #4	Banded
1989	Active, Unsuccessful	0	Nest #4	Young eaglets died.
1990	Active, Successful	1+	Nest #4	Number young unknown.
1991	Active, Unsuccessful	0	Nest #4	
1992	Active, Unsuccessful	0	Nest #4	Failed late in incubation.
1993	Active, Unsuccessful	0	Nest #4	Failed early
1994	Active, Successful	1	Nest #6	Poss. used in prior years.
1995	Active, Successful	3	Nest #6	

[1] Productivity data from records compiled by BLM and Idaho Dept. of Fish and Game for 1967-1983. Productivity data from 1983-present from agency reports and reports compiled by M. Whitfield et. al.

Nestlings were banded in the Swan Valley breeding area in 1982 (2), 1983 (2), 1987 (2), and 1988 (1). One of the youngsters banded in 1982 was subsequently recovered dead northeast of Menan, Idaho in March, 1986. Another eaglet banded in 1987 was found dead on the dike between Lorenzo and Menan in March, 1992.

M. Whitfield, under contract with Targhee National Forest, built an alternate nesting platform in a large Douglas fir in the SW 1/4 Sec.12, R43E, T1N, on the west side of the river in 1991. Bald eagles have not been detected at this potential nest site in subsequent years, but the site is a possible alternative if nesting becomes untenable on the east side of the river.

Nesting Chronology. It appears that incubation is initiated in this breeding area up to two weeks later than at adjacent breeding areas on the South Fork. In 1992, an adult was still in incubation posture on April 16 (later failed). Typically, incubation begins in the Swan Valley breeding area around March 10, with a range of estimated initiation dates of March 5 to March 17. Hatching occurs around April 15, with fledging expected in mid-July.

Occupied Nesting Zone, Zone 1. Zone 1 is defined as the area around nest sites within which the presence of humans first causes significant stress to nesting adults. This area has been found to generally be the area within 400 m or 1/4 mile of an occupied nest. Sight specific monitoring suggests that the zone 1 radius may be greater in areas upslope from nests, and lesser in areas downslope of the nest or separated from the nest by a river or similar barrier. In the Swan Valley breeding area, this zone now applies to the 3 alternate nests that are still intact, numbers 4, 5, and 6, which have been used since 1984 (figure 3).

Key Use Areas, Known Foraging and Perching Areas. In years prior to 1995, adult perches were noted during incidental observations. In summer 1995, observers spent approximately 20 hours monitoring adult and fledged juvenile movements in this breeding area. The key use areas noted in these observations are noted in figure. The adults perched on both sides of the river in the nest vicinity, and made foraging attempts in the river at this point. The adults took fish from the area upriver of Fall Creek Falls, and perched prior to foraging in a snag cottonwood in this area. Adults and fledged young frequently used perches in a bushy Douglas fir and nearby trees on the ridge crest southwest of the SW of the junction of the River Road and Fall Creek Road. The key use area shown in figure includes portions of the breeding area which are increasingly unavailable due to housing development, but which may be used in time periods when human activity is minimal.

Breeding Area Habitat Quality. Habitat quality within the Swan Valley Breeding Area may be dramatically altered within the next few years because of recreational home development. Habitat alteration for homesite development along the river corridor has already greatly reduced the available nesting area on the northeast side of the river.

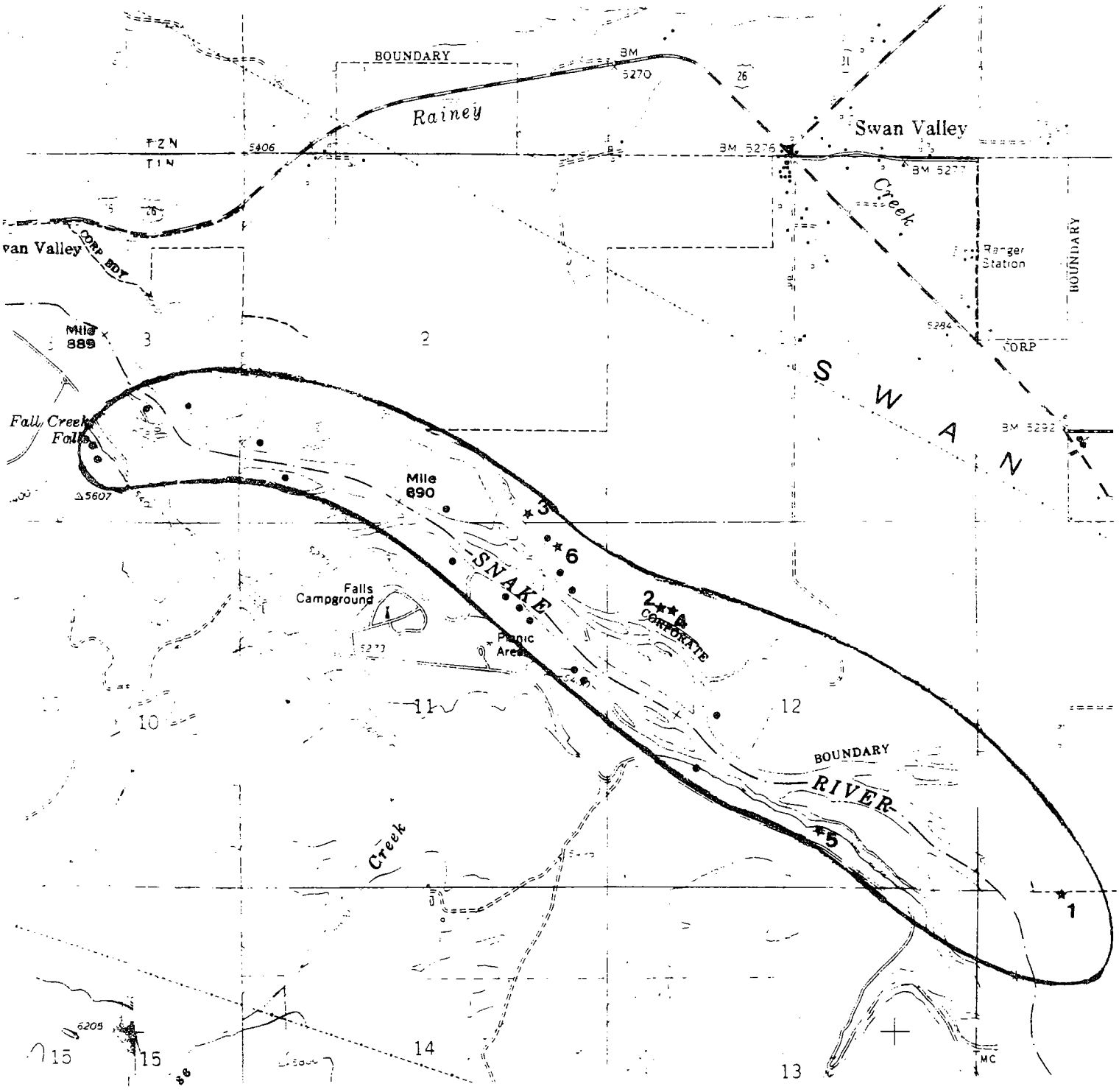

Figure 3. Known key use area within the Swan Valley bald eagle breeding area, South Fork Snake River. Intensive monitoring has not occurred at this breeding area, and the information portrayed is preliminary only. The red line encloses the Principal Management Area. Numbers indicate known nest sites, numbered chronologically.

Antelope Creek 18-IS-11

Breeding Area History. Bald eagle nesting activity in this territory was first noted on Wolf Flat in spring, 1984. An apparently young, inexperienced pair built and incubated on a nest in a cottonwood on Wolf Flat near the South Fork road. The nest was built when there was still snow on the road, and little human activity, but was soon abandoned when the road opened and recreational use of the area increased. The pair continued to incubate until April 24 but the nest was soon abandoned when the road opened and recreational use of the area increased. Between May 2 and May 10 the nest had blown down and adult bald eagles were no longer observed in the area on a consistent basis.

In 1985, the pair probably nested in a Douglas fir across the river, a nest later identified as number two for the territory. This nest was not discovered until 1986. A recently fledged juvenile was seen with the adults in 1985.

In 1986 a new nest, alternate number two, was found across the Snake River from the 1984 nest in a live Douglas fir at mid-slope. The Antelope pair successfully fledged two young each year from nest number two in 1986 and 1987 and evidence at the nest tree suggested that it may have been used by nesting bald eagles in 1985. In 1987, both young were banded and one fitted with a backpack radio tag. The tagged juvenile gradually moved upriver, and was last seen on the South Fork below Burns Creek on September 2. It was subsequently found wintering in the Klamath Basin on the Oregon/California border in 1987 and 1988, and in 1991 nested near Hauser Lake, Montana (Harmata and Oakleaf 1992).

The Antelope pair continued to use nest number two in 1988 and 1989. In 1988, a nestling estimated at 2.5 weeks old was found dead on the nest. Two young eaglets were produced in 1989, although only one successfully fledged.

A new nest (number 3) was discovered upriver of the 1989 nest on March 25, 1990, and two advanced young were produced. In 1991, nest number three was again used. A newly hatched eaglet and one unhatched egg were observed at this nest on April 12, 1991, but only one eaglet survived to fledging. This bird was last seen successfully flying in the nest area on July 31. On March 6, 1992 observations from the west rim of the canyon revealed an incubating adult and 2 eggs in nest number three. However, a local microburst and high wind storm blew the nest out of the tree in early April. During a later visit to the site, S. Austin found two skulls (skunk and raccoon) and broken egg shells in the nest remains.

Adult bald eagles were occasionally observed in the territory in 1993 though a nest was never located that year. Evidence of successful nesting was observed however, on July 13, 1993 when 2 adult bald eagles accompanied and defended 2 fledged young within the territory. In 1994, a new nest was constructed in a snag down slope of nest number three. An adult was observed feeding a single nestling on April 24. Another new nest in a live Douglas fir (nest number five) was located in 1995 along the west end of the territory on the south side of the river. Two youngsters were produced and eventually fledged in July. By the end of July both juveniles were making forays throughout the nesting area and eventually left the territory by mid-September.

Table 6 Known productivity at the Antelope Creek bald eagle breeding area since re-establishment of nesting pairs on the South Fork Snake River.[1]

YEAR	NESTING STATUS	NUMBER YOUNG FLEDGED	NEST NUMBER	COMMENT
1984	Active, Unsuccessful	0	Nest #1	New nest, failed early.
1985	Active, Successful	1	Nest #2	Young of year with adult.
1986	Active, Successful	2	Nest #2	Not banded.
1987	Active, Successful	2	Nest #2	Banded, 1 radio-tagged.
1988	Active, Unsuccessful	0	Nest #2	1 nestling died at 2.5 weeks.
1989	Active, Successful	1	Nest #2	1 downy nestling died.
1990	Active, Successful	2	Nest #3	New alternate nest.
1991	Active, Successful	1	Nest #3	1 egg or young died, 1 fledged.
1992	Active, Unsuccessful	0	Nest #3	Nest blowdown near hatching.
1993	Active, Successful	2	Nest #4	Nested on old osprey nest.
1994	Active, Successful	1	Nest #4	
1995	Active, Successful	2	Nest #5	New alternate nest.

Productivity data from agency reports and reports compiled by M. Whitfield et. al.

Nesting Chronology. Bald eagles in the Antelope nesting area initiate nesting during the first two weeks of March. Hatching follows by the end of the first or second week in April. Fledging occurs in early July, and the young depart for wintering areas in early September.

Occupied Nesting Zone, Zone 1. Five different nests have been used within this territory, including cottonwood and Douglas-fir trees. These nests have ranged in location from the river bottom to the top of conifer-covered slopes which separate the river bottom from agricultural bench lands. This versatility shown in nest location is also seen the foraging habitat used by the Antelope pair. Although most documented foraging by the territorial adults has occurred along the river adults have also been seen foraging in the sage communities along the benches above the river. In 1995, the adult male was observed flying directly from a perch near the nest tree due north to the dry sage brush bench above Table Rock, and appeared to be foraging for ground squirrels. A diversity of prey remains, including skunk, ground squirrel, fish, and waterfowl, have been collected below or in Antelope Creek nests.

Key Use Areas. Extensive 1987 adult observations when a radio-tagged Antelope Creek fledgling was monitored, and 1995 adult observations, contribute most significantly to defining this area (figure 4). Antelope adult eagles focus much of their foraging activity along the river corridor between Wolf Flat and the Spaulding Ranch. Throughout the nesting and brood-rearing period, the majority of adult sightings occurred on the south side of the river in sections 13 and 14 (R 41E.,T3N.). Use of both sides of the river has been observed, although cliff perches on the north side of the river were less used in the 1995 observations. The most notable change in human activity in the breeding area is on the river itself as recreational activity increases yearly. There is also a recently built home on the southside bench opposite

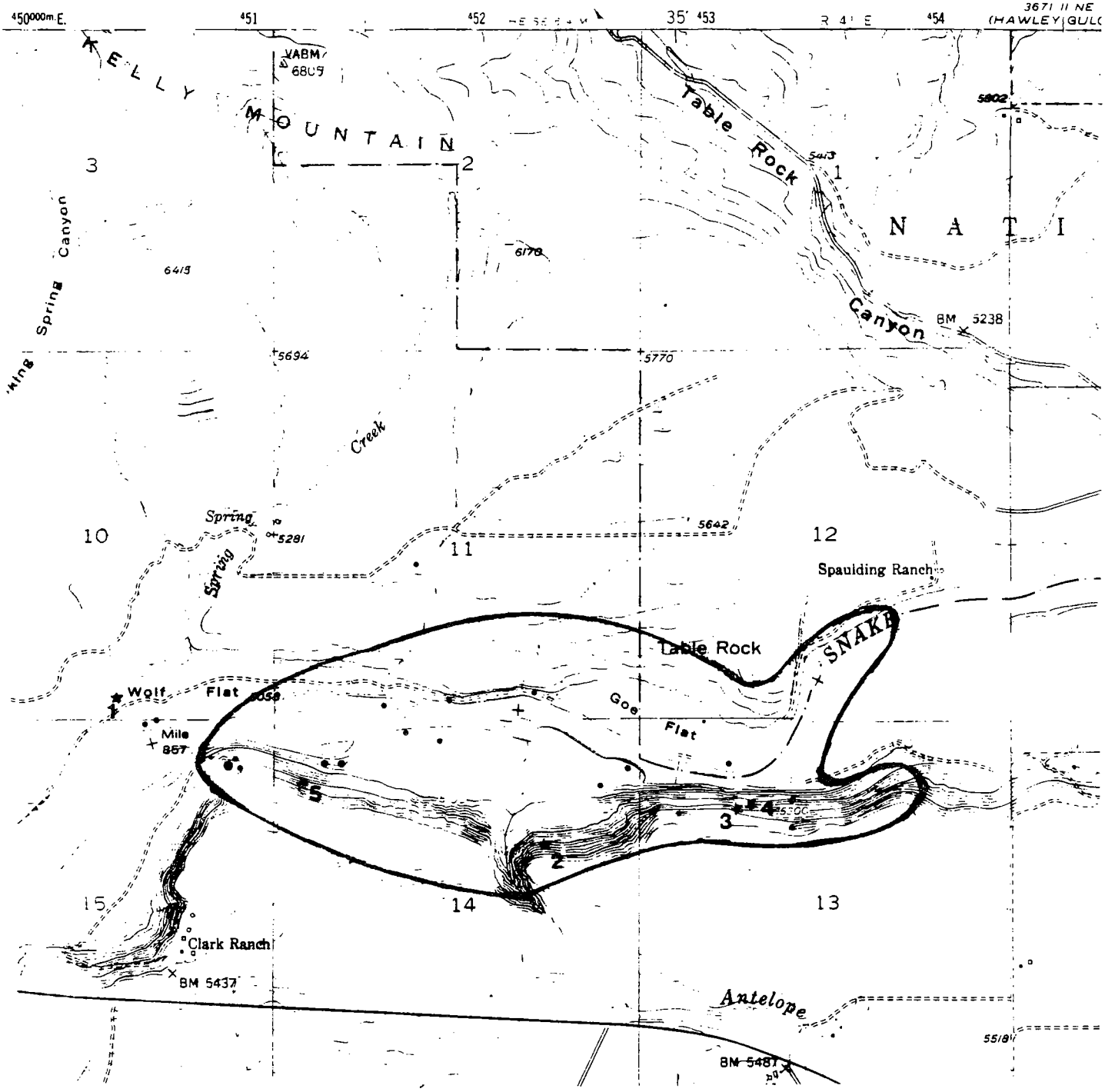

Figure 4. Known key use area within the Antelope Creek bald eagle breeding area, South Fork Snake River. Intensive monitoring has not occurred at this breeding area, and the information portrayed is preliminary only. The red line encloses the Principal Management Area. Numbers indicate known nest sites, numbered chronologically.

Breeding Area Habitat Quality. This river reach features relatively broad canyon bottoms with a considerable variety of available prey. Although multiple channels are found within the pair's home range, most of the favored foraging reach is along a single, large channel. However, the pair also forages in nearby uplands that feature a relatively high proportion of natural vegetation and potential prey. Recreational activity in this reach is relatively high, particularly along the South Fork road. The nest side of the river is as yet an undeveloped mix of native vegetation and cultivated land.

Menan Buttes 18-IS-20

Identification of key use areas was scheduled for this breeding area in 1995, but prolonged high water and difficult access forced us to substitute the St. Anthony Breeding Area in 1995.

St. Anthony 18-IS-15

Breeding Area History. K. Rice (pers. comm.), in her review of the original 1879 survey plat of the St. Anthony area, noted reference to Eagles Nest Ford on a road within Sec 10, R40E, T7N. This is the same section where the current St. Anthony bald eagle nest is located. In the early settlement history of this area, Eagle Nest Ford was often mentioned. A map prepared by the 1872 Hayden Survey noted the Ford. Richard "Beaver Dick" Leigh, an early resident of this area, made several references to this Ford as Eagle Nest Ford, Eagle Nest Crossing, or simply "Eagle Nest" in the 1870s (Thompson and Thompson 1982). In August, 1875, he sent a party up to the Ford to cross with a herd of cattle. In July, 1876, he referred to an old campsite at the crossing. In 1898 he wrote from Wilford in "Freemont County" that the county seat, St. Anthony, was at Eagle's Nest Crossing.

Table 7. Known productivity at the St. Anthony bald eagle breeding area since known establishment of the breeding area by bald eagles in 1984.[1]

YEAR	NESTING STATUS	NUMBER YOUNG FLEDGED	NEST NUMBER	COMMENT
1984	Active, Unsuccessful	0	Nest # 1	Nesting attempt in heron nest.
1985	Active, Unsuccessful	0	Nest #2	Early nest failure
1986	Unoccupied	0		May have been undetected in nest #3.
1987	Active, Successful	3	Nest #3	Three young banded 6/02/87.
1988	Active, Successful	3	Nest #3	Three young banded 5/28/88.
1989	Active, Successful	3	Nest #3	Three young banded 6/10/89.
1990	Active, Unknown	?	Nest #3	Incubating adult 3/30. No follow-up.
1991	Active, Successful	1	Nest #3	One nestling died early in cycle.
1992	Active, Successful	2	Nest #3	Banded 1 of 2 on 6/07/92.
1993	Active, Successful	1	Nest #3	High water year, no banding here.
1994	Active, Successful	2	Nest #3	Not banded.
1995	Active, Successful	1	Nest #3	High water year, not banded.

[1] Productivity data from records compiled by BLM and Idaho Dept. of Fish and Game for 1967-1983. Productivity data from 1983-present from agency reports and reports compiled by M. Whitfield et. al.